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Solvent	Dilution (D) and Washing (W)	Yield(%)	N ₉ – N ₇ Isomers	Temp	NaOH
DMF	D: Toluene W: Toluene/Acetone	96%	N ₉ -(79%); N ₇ -(18%)	160°C	+
DMF	D: Toluene W: Toluene/Acetone	93%	N ₉ -(77%); N ₇ -(19%)	150°C	+
DMF	D: Toluene W: Toluene/Acetone, crystallize	70%	N ₉ -(97%); N ₇ -(1.5%) Crystals from EtOH	160°C	+
DMF	D: Toluene W: Toluene/EtOH(cold)	67%	N ₉ -(91%); N ₇ -(3.3%)	150°C	+
DMF	D: Toluene W: Toluene/Acetone, crystallize	56%	N ₉ -(98%); N ₇ -(1.56%) Crystals from EtOH	130°C	NaOEt
DMF	D: Toluene W: Toluene/EtOH(cold)	95%	N ₉ -(55%); N ₇ -(12%) Un-reacted starting	160°C	-
DMF	D: Toluene W: Toluene/EtOH(cold)	70%	N ₉ -(83%); N ₇ -(6%)	150°C	-
DEF	D: Toluene W: Toluene/EtOH(cold)	89%	N ₉ -(77%); N ₇ -(21%)	150°C	+
DMA	D: Toluene W: Toluene/EtOH(cold)	70%	N ₉ -(85%); N ₇ -(6%)	150°C	+
DMA	D: Toluene W: Toluene/EtOH(cold)	84%	N ₉ -(73%); N ₇ -(19.5%)	150°C	-

Table 1

Figure 1

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Solvent	Dilution (D) and Washing (W)	Yield(%)	N ₉ – N ₇ Isomers	Temp	NaOH
DMA	D: None, evaporated to dryness and t-BME added W: t-BME	100%	N ₉ -(76%); N ₇ -(20%)	150 ⁰ C	+
DMA	D: None, evaporated to dryness and CH ₃ CN added W: CH ₃ CN	92%	N ₉ -(80%); N ₇ -(16%)	150 ⁰ C	+
DMA	D: None, evaporated to dryness and EtOH added W: EtOH	67%	N ₉ -(90%); N ₇ -(4%)	150 ⁰ C	+
DMA	D: None, evaporated to dryness and IPA added W: IPA	84%	N ₉ -(92%); N ₇ -(3%)	150 ⁰ C	+
DMA	D: None, evaporated to dryness and IPA/CH ₃ CN (1:1) added W: IPA/CH ₃ CN (1:1)	91%	N ₉ -(95.25%); N ₇ -(2.49%)	150 ⁰ C	+
DMA	D: Evaporated to half in volume and Toluene added W: Toluene/ EtOH(cold)	87%	N ₉ -(76%); N ₇ -(12%)	160 ⁰ C	+
DMA	D: Evaporated to half in volume and Toluene added W: Toluene/ EtOH(cold)	89%	N ₉ -(68%); N ₇ -(15%)	140 ⁰ C	+

Table 2

Figure 2

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Solvent	Dilution (D) and Washing (W)	Yield(%)	N ₉ – N ₇ Isomers	Temp	Cat
DMA	D: CH ₃ CN W: CH ₃ CN	94%	N ₉ -(88%); N ₇ -(11%)	150 ⁰ C	+
DMA	D: EtOAc W: EtOAc	89%	N ₉ -(90%); N ₇ -(8%)	150 ⁰ C	+
DMA	D: Toluene W: Toluene/EtOH (cold)	95%	N ₉ -(92%); N ₇ -(7.5%)	150 ⁰ C	+
DMA	D: Toluene W: IPA (cold)	97%	N ₉ -(86%); N ₇ -(13%)	150 ⁰ C	+
DMA	D: IPA W: IPA (cold)	91%	N ₉ -(97%); N ₇ -(1.34%)	150 ⁰ C	+
DMA	D: IPA W: IPA	87%	N ₉ -(97%); N ₇ -(1.15%)	160 ⁰ C	+
DMA	D: IPA W: IPA	82%	N ₉ -(98%); N ₇ -(0.96%)	140 ⁰ C	+
DMA	D: t-BME W: IPA	87%	N ₉ -(95.4%); N ₇ -(2.78%)	150 ⁰ C	+
DMF	D: Toluene W: Toluene/EtOH (cold)	93%	N ₉ -(91%); N ₇ -(3%)	Reflux	+

Table 3

Figure 3